Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte YUKIHIDE YAMASHITA, MASAYUKI YAMAGUCHI, SHIROUU KAMIYAMA and KENICHIROU MORI

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Appeal No. 2000-0048
Application 08/909,869

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ON BRIEF

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Before OWENS, KRATZ and DELMENDO, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's final rejection of claims 1 and 2, which are all of the claims in the application.

THE INVENTION

The appellants claim a reverse painting process[1] wherein during a step of applying powder coating material to a preheated workpiece, a sheet of the workpiece having a slower cooling rate than another sheet cools to below the softening point temperature of the powder. The appellants state that due to the preheating and cooling, 1) the coating material at the boundary between a film formed by powder coating and an electrodeposited film formed next to it on the workpiece surface is sufficiently thick to provide a high level of rustproofing, and 2) the time required for the subsequent fusing of the powder coating is significantly shortened (specification, page 6, lines 12-17). Claim 1 is illustrative:

1. A reverse painting process for work to be painted with a powdery paint having a crosslinking and curing

[1] The appellants state that reverse painting is "a method which comprises forming a powder coating on, for example, a part of a vehicle body, giving it heat treatment, and forming an electrodeposited coating on the rest thereof" (specification, page 1, lines 8-11).

temperature, said work to be painted including steel sheets having various cooling rates, at least one of said cooling rates being faster and another of said cooling rates being slower, comprising the steps of:

using a first temperature above the crosslinking and curing temperature for preheating the work to be painted to second temperatures above the softening point temperature;

applying the powdery paint to the work upon cooling of the work so that a one of said steel sheets having the slower cooling rate cools below the softening point temperature during this applying step;

melting said powdery paint by heat at a third temperature above the softening point temperature, and below the crosslinking and curing temperature to form a film on the work in a fusing oven before the work is cooled to ambient temperature; and

coating the work with an electrodeposited film.

THE REFERENCES

Suzuki et al. (Suzuki)	4,333,807	Jun. 8, 1982
Shaneyfelt	5,288,324	Feb. 22, 1994

THE REJECTION

Claims 1 and 2 stand rejected under 35 U.S.C. § 103 as being unpatentable over Suzuki in view of Shaneyfelt.

OPINION

We reverse the aforementioned rejection.

Suzuki discloses a reverse painting process (col. 2,

lines 15-58), but does not disclose preheating the workpiece prior to application of the powder coating material, or cooling the workpiece from a temperature above the softening point temperature of the powder coating material such that one sheet of the workpiece having a slower cooling rate cools to below the powder softening point temperature during the step of applying the powder coating material.

Shaneyfelt discloses washing a workpiece, heating the workpiece to dry it, and then cooling the workpiece only partially before applying powder coating material thereto (col. 8, lines 55-64). Applying the powder coating to a workpiece which is heated, Shaneyfelt teaches, causes a substantially greater adherence of powder particles to the workpiece, particularly small particles that ordinarily do not hold a charge and will not adhere to the workpiece (col. 8, line 64 - col. 9, line 6).

The examiner argues that "[w]hen Suzuki et al. is taken in view of the preheating and cooling advantages suggested by Shaneyfelt, it would have been obvious to one skilled in the art to cool the substrate completely, which would include the components having the slowest cooling rates, below the

softening temperature of the coating material for the application of the coating, with the anticipation of producing the expected coating on the substrate" (answer, page 5).

This argument is inconsistent with the teaching by Shaneyfelt that the powder is applied at a temperature such that small powder particles, which ordinarily will not hold a charge and will not adhere to the workpiece, adhere readily to the surface of the workpiece (col. 8, line 64 - col. 9, line 4). This teaching indicates that the workpiece temperature at the time the powder contacts the workpiece surface is above the softening point temperature of the powder such that the small powder particles which do not hold a charge and, therefore, are not held to the workpiece surface by electrostatic attraction, adhere to the workpiece surface by way of being thermally softened upon contact with that surface.

The appellants' claims both require that a sheet of the workpiece having a slower cooling rate cools below the powder softening point temperature during the application of the powder coating material to the workpiece. The indication by Shaneyfelt, however, that the powder is applied to a workpiece

surface at a temperature which is above the softening point temperature of the powder so as to enable adhesion to the workpiece surface of the small particles which do not hold a charge, would have led one of ordinary skill in the art to maintain the workpiece temperature above the powder softening temperature throughout the powder coating step so that the desired adhesion of the small particles to the workpiece surface is obtained. Therefore, even if one of ordinary skill in the art would have been led by the applied references to apply Suzuki's powder coating material according to the teaching by Shaneyfelt, such a person would not have been led by these references to lower the temperature of a slower cooling sheet below the softening point temperature of the powder during the powder applying step as required by the appellants' claims.

For the above reasons we conclude that the examiner has not carried the burden of establishing a *prima facie* case of obviousness of the appellants' claimed process. Accordingly, we reverse the examiner's rejection.

DECISION

The rejection of claims 1 and 2 under 35 U.S.C. § 103 over Suzuki in view of Shaneyfelt is reversed.

REVERSED

TERRY J. OWENS Administrative Patent Judge	)
PETER F. KRATZ Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)

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Merchant Gould Smith Edell
Welter & Schmidt
3100 Norwest Center
Minneapolis, MN 55402-4131